

## What Is Open Burning?

As defined by the EPA:

 Any open flame in the environment, including wildfires, camp fires, ceremonial fires, etc.

As defined by the Division for Air Quality:

 Burning any matter without an approved burn chamber or without an approved stack/chimney with control devices.



Most open burning is prohibited in Kentucky because toxic gases are often emitted, which harm human health and/or the environment.

Air pollution created from open burning can:

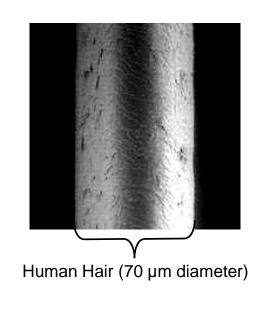
- Cause respiratory diseases such as asthma, emphysema, and chronic bronchitis.
- •Irritate the eyes and skin, depress the central nervous system, and cause headaches, dizziness, and fatigue.

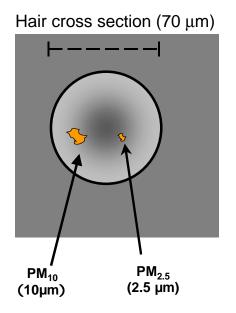
# Smoke from open burning contains harmful substances, such as:

- Dioxins that can cause birth defects, and have been linked to cancer in humans.
- Particulate matter, which can become trapped in the lungs.
- Volatile organic compounds including acetaldehyde, formaldehyde and naphthalene. VOCs are a precursor to ozone formation.
- Corrosives like hydrochloric acid.

#### Particulate Matter: What is It?

A complex mixture of extremely small particles and liquid droplets





M. Lipsett, California Office of Environmental Health Hazard Assessment

- Lung irritant
- Associated with heartbeat irregularities and heart attacks
- May contain more harmful particles, such as dioxins

## Ozone: Good or Bad?

Blakill ml.

- Good up high (filters overhead UV light)
- Bad near by (manmade pollutant that causes breathing difficulties)
- O<sub>3</sub>: Bad (ground-level) ozone is formed when NOx and VOCs combine in the presence of heat and strong sunlight.

### Dioxin

- A study conducted by EPA and the New York State Department of Health revealed that burning ordinary household rubbish in a barrel generated large amounts of dioxins and furans.
- Dioxin is a persistent compound that bio-accumulates in fatty tissues.
- Exposure to dioxin can alter the fundamental growth and development of cells that can lead to:
  - Immune system suppression
  - Disruption of hormonal systems
  - Cancer

## Volatile Organic Compounds

- Formaldehyde: Colorless, pungent smelling gas
- Commonly found in pressed wood products, paints, coatings, siding, urea-formaldehyde foam and fiberglass insulation.
- Symptoms of exposure >0.1 PPM include:
  - Watery eyes
  - Burning sensation in eyes and throat
  - Nausea
  - Difficulty in breathing: Coughing, chest tightness, wheezing
  - Skin rashes
  - May cause cancer

### Corrosives

- Hydrochloric Acid
- Commonly released when PVC pipe or other Poly Vinyl Chloride products (#3 plastics) are burned
- Symptoms of exposure include:
  - Dermatitis, skin burns
  - Rhinitis, laryngitis, tracheitis, hoarseness, choking
  - Bronchitis, pulmonary edema, cough
  - Nausea, vomiting, abdominal pain, diarrhea, dehydration
  - Convulsions, chills
  - Shock, lethargy, stupor
  - Permanent visual damage
  - Circulatory collapse which may lead to death







Photo by John McColgan, US Forest Service Firefighter . . . could turn into a disaster. An estimated 35-40% of Kentucky's wildfires start when open burning gets out of control.





- Fires set for recreational or ceremonial purposes (camp fires, bonfires)
- Fires set for cooking (camp fires)



- Comfort heat fires if:
  - ambient temperature is < 50 degrees</li>
     Fahrenheit;
  - Excessive or unusual smoke is not created
  - Only clean lumber or vegetative matter is burned; and
  - The fire is burned in a container not exceeding fifty-five (55) gallons in size.

## Legal Burning Activities

- Burning of natural growth disturbed as part of land clearing and maintenance (development sites, etc.) if:
  - •Burning is limited to two (2) contiguous acres at any one time
  - •No materials such as tires or heavy oil which tend to produce dense smoke are used to cause ignition or aid combustion, and
  - The burning is done on days when conditions do not pose a threat of igniting a forest fire.



# Legal Burning Activities

- Fires set to dispose of household rubbish
  - •Material and trash, excluding garbage, accumulated by < five (5) family units on a daily basis, if the fires are maintained by an occupant.
  - Really allows only burning of paper products.

#### Does *not* include:

- Garbage, defined as putrescible animal or vegetable matter
- •Plastic materials, foam insulation, Styrofoam, etc.





# Legal Burning Activities

- Fires set to burn leaves:
  - In cities with < 8,000 population</li>

The following counties are not allowed to burn leaves during the ozone season:

- •Jefferson, Boone, Kenton, Campbell, McCracken, Boyd, Henderson, Bullitt and Oldham
- Remember, check w/ local city or county agencies on any further restrictions.

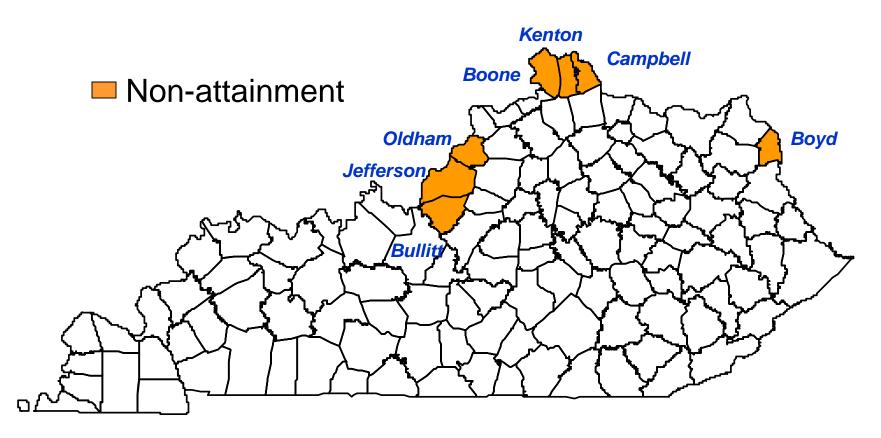
# When can Approved Material be Burned?

Approved materials may be burned anytime, EXCEPT:

- In current or previous non-attainment areas for Ozone & Particulate Matter, between the dates of May 1- September 30
- •During fire season (February 15 April 30 and October 1 December 15), between 6 am and 6 pm, and only when the wind is at a minimum.

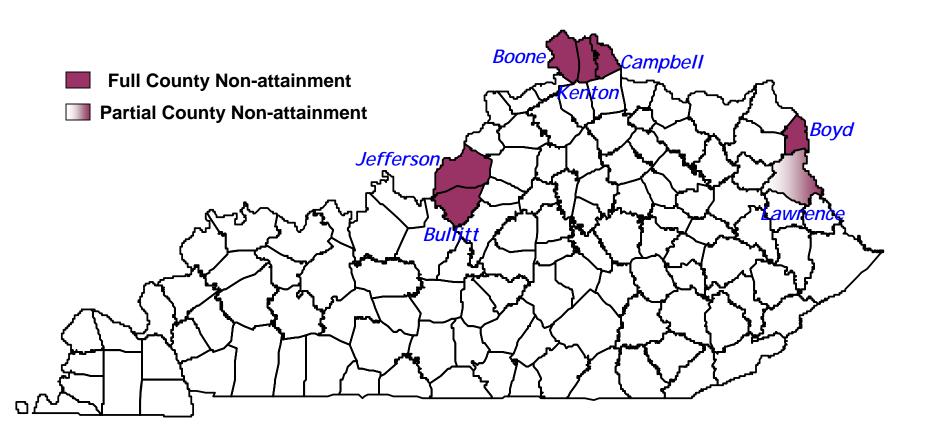
## EPA's 8-hour Ozone Non-attainment Designations

Published April 5, 2005 Based on 2002-2004 Monitoring Data



# EPA's PM2.5 Non-attainment Designations

Published April 5, 2005 Based on 2002-2004 Monitoring Data



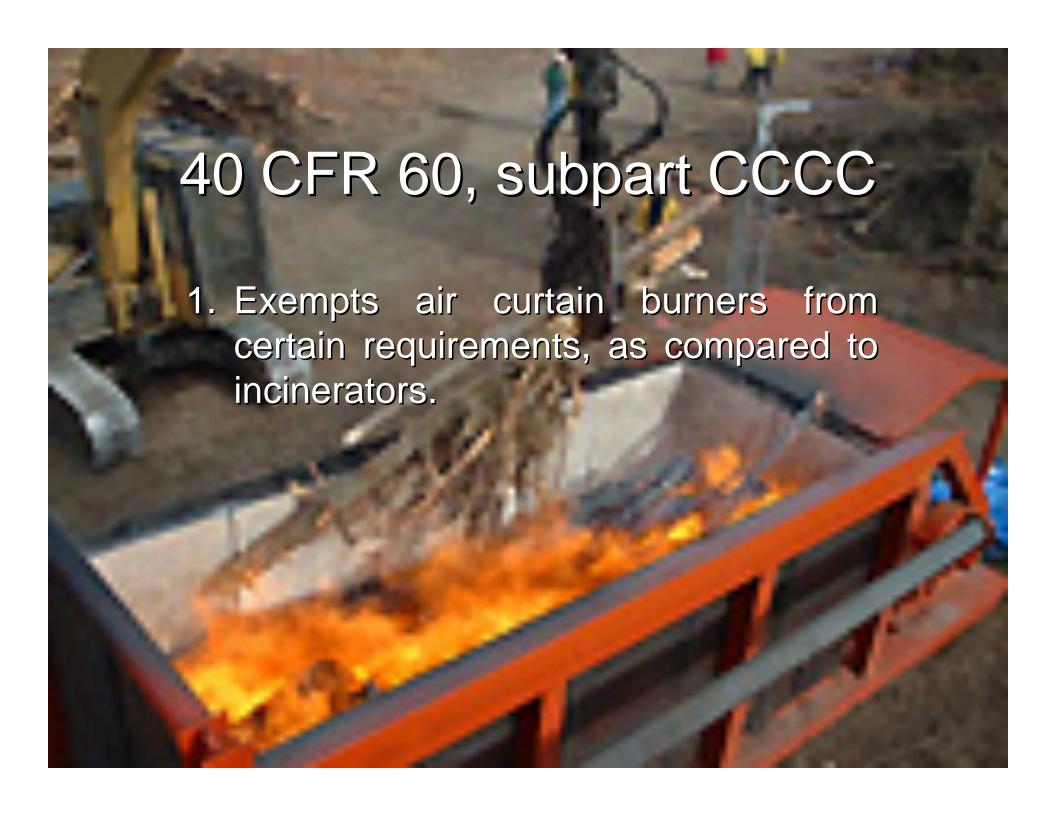






### Air Curtain Burners

- Air Curtain Burners (ACBs) provide another way to legally dispose of <u>specified</u> types of debris.
- ACBs are contained units that supply air to minimize particulate matter.
- ACBs are allowed by 40 CFR 60, subpart CCCC, a regulation that applies to municipal solid waste incinerators.



## 40 CFR 60, subpart CCCC

- 2. Requires that opacity during startup remain < 35% & < 10% opacity during operation.
- Recordkeeping is required.
- Determination of opacity will require that someone becomes certified to read opacity.





## Clean Lumber

Wood or wood products that have been cut or shaped and include wet, air-dried, or kiln-dried wood products.

#### Does not include:

- Commercial or industrial waste
- Wood products that have been:
  - Painted,
  - Pigment-stained, or
  - Pressure-treated by compounds such as CCA, pentachlorophenol, or creosote.



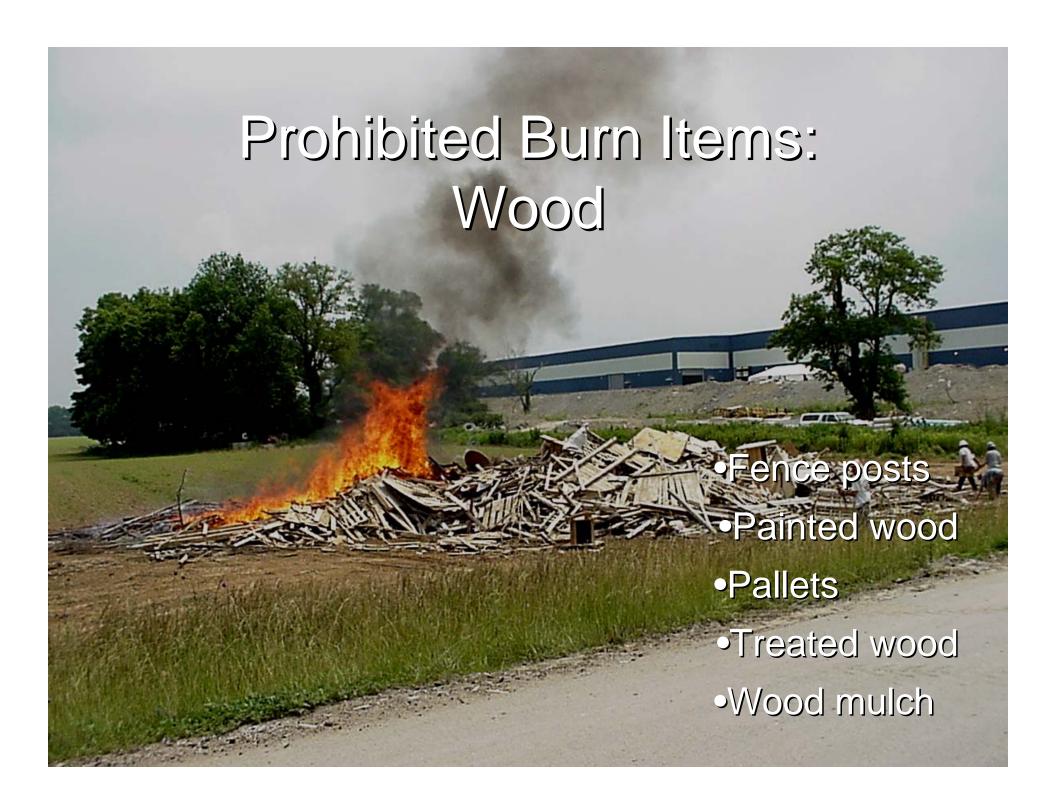






### Building Disposal

- Division of Waste Management allows for ON-SITE BURIAL of buildings.
- Depth to cover minimum 2 feet of clean soil
- At least 4 feet above ground water table
- Before burial, hazardous materials must be removed, including:
  - Asbestos, fluorescent bulbs, mercury switches, anything that could be considered toxic or hazardous material.
  - Any furnishings, carpets, etc. must be removed.
- Questions? Contact Bob Bickner, DWM (502) 564-6716

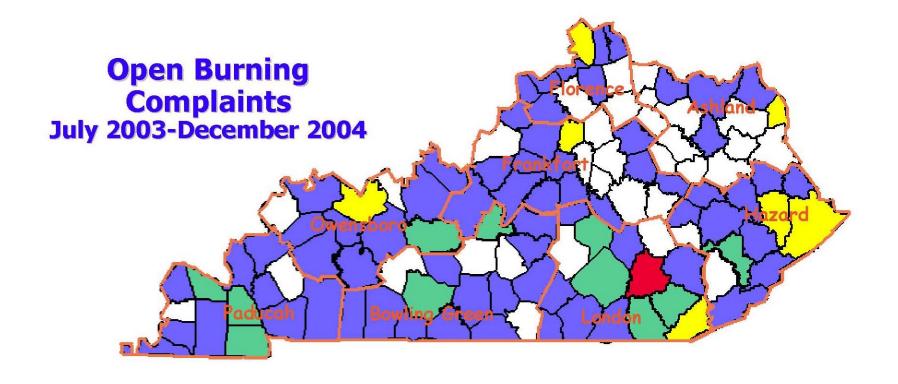


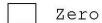




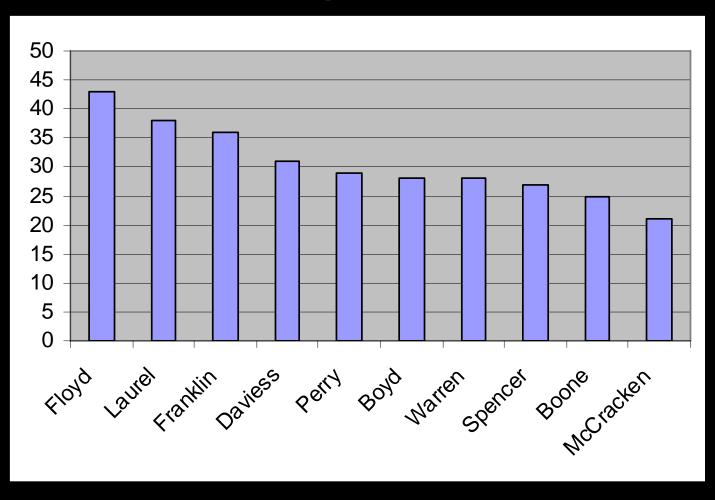
# Illegal open burning has continued to be a serious issue for many years in Kentucky.

- •In 2003, the Division for Air Quality received 223 open burning complaints, which resulted in the issuance of 105 Notices of Violation.
- •In 2004, DAQ received 344 open burning complaints, and issued 215 citations.
- In 2005, DAQ received 456 open burning complaints and issued 308 citations.

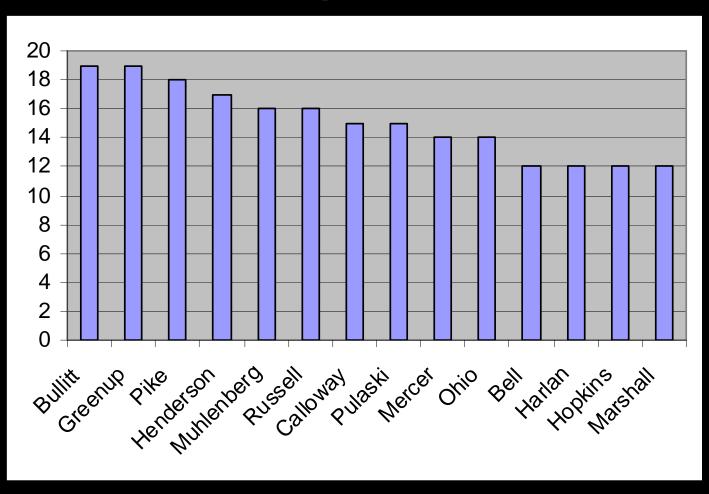




# Open Burning Complaints 2004-present



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#### 11 Complaints:

Grayson, Hardin, Knox, Shelby

#### 10 Complaints:

Woodford, Barren, Garrard, Hart, Henry, Lincoln, Logan

# Most Open Burning is Not Necessary!

- Brush could be composted, piled up to provide wildlife cover, or simply left to decay.
- Most debris can be recycled.
- Debris that is not recyclable should be land-filled.
- By making a few sensible choices, you can reduce the amount of disposable materials you create in the first place!

Illegal open burning could result in a fine of up to \$25,000 per day per violation.

In addition to Division for Air Quality rules, other state and local regulations may apply. The Kentucky Division of Forestry and the State Fire Marshal's Office have regulations aimed at ensuring a blaze does not spread. Many city and county governments have ordinances regarding outdoor fires.

#### Open Burning Flow Chart

Division for Air Quality
KAR 63:005
Minimum stringency
Add'l restrictions based on attainment status

Local City and County Govt.

May have more stringent rules than the state

Local fire department
Can record planned burns
Cannot give permission for illegal burning

Division of Forestry

During fire season add'l DOF rules apply





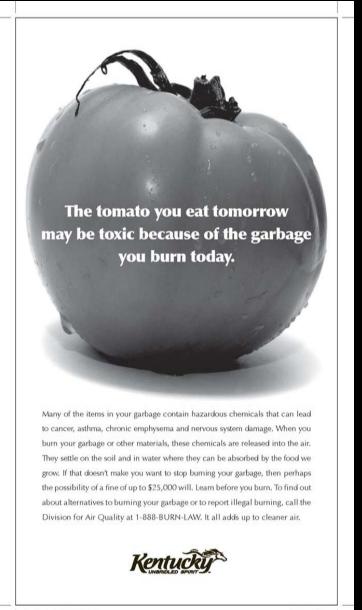
If you burn your garbage, you may be burning out your lungs. That's because garbage and other materials release toxic chemicals into the air as they burn. Breathing them in can lead to asthma, chronic emphysema and cancer. If you are cited for burning garbage, there can also be a fine of up to \$25,000. Learn before you burn. To find out about alternatives to burning your garbage or to report illegal burning, call the Division for Air Quality at 1-888-BURN-LAW.

It all adds up to cleaner air.

Open Burning Ad - FINAL Indd 1 9/16/05 11:24:49 AM

When you burn your garbage, hazardous chemicals are released that can lead to cancer, asthma, chronic emphysema, and nervous system damage. These chemicals settle on the soil and in water where they can be absorbed by the food we grow. If that doesn't make you want to stop burning your garbage, then perhaps the possibility of a fine of up to \$25,000 will. Learn before you burn. To find out about alternatives to burning your garbage, or to report illegal burning, call the Division for Air Quality at 1-888-BURN-LAW.

It all adds up to cleaner air.



Open Burning Ad - FINAL indd 2

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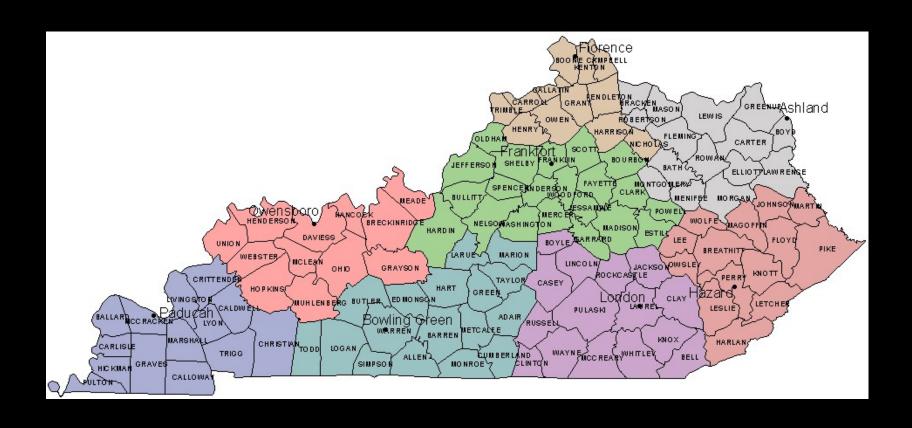
### KY DIVISION FOR AIR QUALITY

OPEN BURNING HOTLINE
1-888-BURN-LAW

OPEN BURNING E-MAIL burnlaw@ky.gov



### DAQ Regional Offices



### For more information concerning open burning, you may also contact your regional DAQ office:

Ashland	Karen Deskins	(606) 929-5285
Bowling Green	Troy Tabor	(270) 746-7475
Florence	Clay Redmond	(859) 525-4923
Frankfort	Mark Ritter	(502) 564-3358
Hazard	Greg Ratliff	(606) 435-6022
London	Mike Hannon	(606) 878-0157
Owensboro	Pat Barker	(270) 687-7304
Paducah		(270) 898-8468



KY Division for Air Quality 803 Schenkel Lane Frankfort, KY 40601 (502) 573-3382 http://www.air.ky.gov





